

EXHIBIT 87



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Transcript of Shigeki Shimomura

Date: June 16, 2020

Case: VLSI Technology LLC -v- Intel Corporation

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1 (1 to 4)

Conducted on June 16, 2020

<p>1 UNITED STATES DISTRICT COURT</p> <p>2 FOR THE WESTERN DISTRICT OF TEXAS</p> <p>3 AUSTIN DIVISION</p> <p>4 - - - - -x</p> <p>5 VLSI TECHNOLOGY LLC, : Civil Action No.:</p> <p>6 Plaintiff, : 1:19-CV-977-ADA</p> <p>7 v. :</p> <p>8 INTEL CORPORATION, :</p> <p>9 Defendant. :</p> <p>10 - - - - -x</p> <p>11 OUTSIDE COUNSEL'S EYES ONLY</p> <p>12 VIDEOTAPED DEPOSITION OF SHIGEKI SHIMOMURA</p> <p>13 CONDUCTED VIRTUALLY</p> <p>14 Tuesday, June 16, 2020</p> <p>15 9:00 a.m. PST</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23 Job No.: 303262</p> <p>24 Pages: 1 - 231</p> <p>25 Reported By: Charlotte Lacey, RPR, CSR No. 14224</p>	<p>1 A P P E A R A N C E S</p> <p>2 ON BEHALF OF PLAINTIFF VLSI TECHNOLOGY LLC:</p> <p>3 CHARLOTTE J. WEN, ESQUIRE</p> <p>4 DOMINIK SLUSARCZYK, ESQUIRE</p> <p>5 IRELL & MANELLA LLP</p> <p>6 1800 Avenue of the Stars, Suite 900</p> <p>7 Los Angeles, California 90067</p> <p>8 (310) 277-1010</p> <p>9</p> <p>10 ON BEHALF OF DEFENDANT INTEL CORPORATION and</p> <p>11 DEPONENT:</p> <p>12 JAMES MICHAEL LYONS, ESQUIRE</p> <p>13 S. CALVIN WALDEN, ESQUIRE</p> <p>14 JONATHAN A. COX, ESQUIRE</p> <p>15 TAEG SANG CHO, ESQUIRE</p> <p>16 WILMER CUTLER PICKERING HALE AND DORR, LLP</p> <p>17 60 State Street</p> <p>18 Boston, Massachusetts 02109</p> <p>19 (617) 526-6000</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p>1 VIDEOTAPED DEPOSITION OF SHIGEKI SHIMOMURA,</p> <p>2 CONDUCTED VIRTUALLY.</p> <p>3</p> <p>4</p> <p>5</p> <p>6 Pursuant to notice, before Charlotte Lacey,</p> <p>7 Certified Shorthand Reporter, in and for the State of</p> <p>8 California.</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1 A P P E A R A N C E S C O N T I N U E D</p> <p>2 ON BEHALF OF DEPONENT:</p> <p>3 BRIAN L. FERRALL, ESQUIRE</p> <p>4 KEKER, VAN NEST & PETERS, LLP</p> <p>5 633 Battery Street,</p> <p>6 San Francisco, California 94111</p> <p>7 (415) 391-5400</p> <p>8</p> <p>9 ALSO PRESENT:</p> <p>10 Jillian Barricelli, Videographer</p> <p>11 Kevin Gogarty, AV Technician</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>

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<p>153</p> <p>1 as the process manufacturability and considerable --</p> <p>2 expected the layout impact using this type of</p> <p>3 implementation, which means the die size and the --</p> <p>4 the -- possibly power too.</p> <p>5 Q Okay. And was the other patent that you</p> <p>6 reviewed the 7,523,373 patent?</p> <p>7 A Yes, I read through last night.</p> <p>8 Q How long did you spend reading the</p> <p>9 '373 patent?</p> <p>10 A I am not good at reading in English, so it</p> <p>11 took quite some time. But it's about -- it took about</p> <p>12 over an hour and a half because my issue is so much --</p> <p>13 how I say it? -- different implementations. So I, you</p> <p>14 know -- in order to fully understand, you know, the</p> <p>15 paragraphs and the phrases, it -- it takes time. So --</p> <p>16 but it took that much time, roughly.</p> <p>17 Q Sure. So before last night, had you ever</p> <p>18 reviewed the '373 patent?</p> <p>19 A '373... Yeah. We had a chat -- a discussion</p> <p>20 session on the --</p> <p>21 MR. LYONS: Mr. Shimomura, just remind you</p> <p>22 that that was a yes-or-no question, and I'd ask that</p> <p>23 you -- any substance of any conversations you had with</p> <p>24 attorneys, that you don't disclose those.</p> <p>25 THE WITNESS: Oh. Okay. Then...</p>	<p>155</p> <p>1 level is checked against the -- the currently</p> <p>2 operation -- operation voltage, and if that is lower</p> <p>3 to -- than -- that registered voltage value, then it</p> <p>4 will switch the power supply.</p> <p>5 But we are, in Broadwell, using up any voltage</p> <p>6 to use the both VCCALT as well as the VCCCORE. So it's</p> <p>7 not just based on one-time voltage difference control to</p> <p>8 switch over. It's more like constant.</p> <p>9 And also, if you do take this approach, you</p> <p>10 have to actually characterize all -- and test all the</p> <p>11 bit cells operation voltage as to how low it's going to</p> <p>12 go, and it could cost tremendous amount of testing and</p> <p>13 the characterization time and cost as the outcome to</p> <p>14 characterize these.</p> <p>15 And then storing that into the -- some memory</p> <p>16 element, that seems to be quite difficult and costly</p> <p>17 to -- from my -- my understanding in terms of the</p> <p>18 high-volume product -- you know, the production</p> <p>19 standpoint, it would be very costly, I would think.</p> <p>20 We had a similar kind of discussion for</p> <p>21 different topic to do characterize one die -- each die</p> <p>22 to program certain tunabilities. But that was --</p> <p>23 everyone was saying -- everyone was kind of opposed to</p> <p>24 that idea because that is too much cost to test and</p> <p>25 characterize. So that kind of approach was avoided from</p>
<p>154</p> <p>1 A I don't think there's anything here you can...</p> <p>2 yeah, I just read it after, you know, the mention the</p> <p>3 lawyer passed down, you know, through the e-mail. But</p> <p>4 that's about it.</p> <p>5 Q Okay. And did you -- did you have any</p> <p>6 opinions about whether Intel's products practice the</p> <p>7 '373 patent?</p> <p>8 A I don't think so. Based on what there is</p> <p>9 describing and what -- how they are determining the</p> <p>10 operation and switching the voltage regulators, it</p> <p>11 doesn't seem like Broadwell product is doing the same</p> <p>12 approach.</p> <p>13 Q Why do you think that Broadwell isn't doing</p> <p>14 the same approach as what's disclosed in the</p> <p>15 '373 patent?</p> <p>16 A Well -- yeah. This patent is actually</p> <p>17 registering all the voltage level of the -- of the</p> <p>18 various minimum operation voltage, so-called -- what is</p> <p>19 that called? VCC-min -- well, minimum -- minimum read</p> <p>20 voltage or minimum -- what is that called? The state --</p> <p>21 the patent was describing as the first minimum voltage,</p> <p>22 second minimum voltage, you know, for the read and write</p> <p>23 separately, and that voltage level is recorded or stored</p> <p>24 into the -- some storage element, either volatile or</p> <p>25 non-volatile memory, and then based on that voltage</p>	<p>156</p> <p>1 our -- you know, the mindset. So at least myself and</p> <p>2 probably Jim and Jeff Miller thinks the same way.</p> <p>3 Q So other than the reasons you just gave, are</p> <p>4 there any other reasons why you think that Intel's</p> <p>5 products do not use the '373 patent?</p> <p>6 A Other reasons?</p> <p>7 MR. LYONS: Objection; calls for a legal</p> <p>8 conclusion.</p> <p>9 A Can I think of anything? Implementation-wise,</p> <p>10 probably it's not difficult to implement. It's probably</p> <p>11 relatively easier, but the making it product and</p> <p>12 characterizing it, you know, each part would be -- yeah,</p> <p>13 that -- again, the first opinion I just provided is</p> <p>14 probably the one major issue to avoid that type of</p> <p>15 approach. That's my opinion.</p> <p>16 Maybe -- yeah. I think from the -- as memory</p> <p>17 design -- memory array designing, that's what I think --</p> <p>18 at least I should be thinking first. Yeah. Because</p> <p>19 that -- the memory array usually, you know, includes,</p> <p>20 like, thousands of millions of the bit cell, and we have</p> <p>21 to take care of all of the bits not to getting out of</p> <p>22 the operation -- how you say? -- operational -- how you</p> <p>23 say? -- in order to make sure all the bits have to be</p> <p>24 operational across the range of the voltage, we cannot</p> <p>25 really characterize all of them.</p>

<p style="text-align: right;">157</p> <p>1 You know, especially, you know, just LLC data</p> <p>2 array itself, it has the 8 megabyte, you know, that</p> <p>3 means 8 millions or more of the memory cells, and every</p> <p>4 single cell have to be functional across the range of</p> <p>5 the voltage, and also each wafer may be producing -- how</p> <p>6 many? -- like, close to thousand, let's say, of the</p> <p>7 dies, and then every week or every month, there is</p> <p>8 millions of, you know, parts coming into the fab, and in</p> <p>9 order to characterize every single one of them, it's --</p> <p>10 it would just take too much cost. That's my opinion.</p> <p>11 Q Okay. Do you have any opinion about whether</p> <p>12 the '373 patent is valid?</p> <p>13 A Oh, it is valid, but from my view, I don't</p> <p>14 know if Intel is -- will try to use this approach.</p> <p>15 Q Okay. And do you have any opinion about</p> <p>16 whether the '485 patent is valid?</p> <p>17 MR. LYONS: Objection; calls for a legal</p> <p>18 conclusion.</p> <p>19 A Yeah. Well, both of them are valid. Yeah. I</p> <p>20 see the -- the -- the value of the patent.</p> <p>21 But from my view, and some of my old</p> <p>22 colleagues, and my senior, including Jim Conary, Jeff</p> <p>23 Miller, even Eric Karl, I don't think they will choose</p> <p>24 that way.</p> <p>25 Yeah, one other example maybe I could mention</p>	<p style="text-align: right;">159</p> <p>1 considered as the option to modulate the capacitance</p> <p>2 among the charge share node. And by increasing or</p> <p>3 decreasing the number of disconnect location from the --</p> <p>4 this one is from the row numbers, then you can modulate</p> <p>5 the capacitance among the charge share. But that would</p> <p>6 require the actual layout changes, and that is not</p> <p>7 something we'd like to do.</p> <p>8 Q I see. So your opinion is based on one of the</p> <p>9 figures. It sounds like figure number 2?</p> <p>10 MR. LYONS: Objection; misstates testimony.</p> <p>11 A Yeah, figure number 2.</p> <p>12 Q Okay. And do you have any legal training?</p> <p>13 A Any -- any -- any what training?</p> <p>14 Q Let me say that again. Do you have any legal</p> <p>15 training?</p> <p>16 A Legal training? You mean at inside -- when I</p> <p>17 was in Intel?</p> <p>18 Q I'm asking if you attended law school.</p> <p>19 A No, me. No, no, no. I'm not good at any of</p> <p>20 this.</p> <p>21 Q And have you studied patent law?</p> <p>22 A Excuse me?</p> <p>23 Q Have you studied patent law?</p> <p>24 A Have I -- have I sell or -- I don't quite</p> <p>25 understand that question.</p>
<p style="text-align: right;">158</p> <p>1 is using -- yeah, the option to modulate the capacitance</p> <p>2 component. So they are disconnecting the cells' power</p> <p>3 supply net out of the -- you know, charging the node.</p> <p>4 That is tunability, but that can be achieved by the</p> <p>5 manufacturing mask divisions.</p> <p>6 Intel as a high-volume product manufacturing</p> <p>7 company, I don't think we'd take that approach. We'd</p> <p>8 rather prefer to use programmable tunability. That's</p> <p>9 one of the major -- one of the reasons not to use this</p> <p>10 type of approach, I would think.</p> <p>11 Q So your understanding of how the '485 patent</p> <p>12 disclosed tunable capacitance --</p> <p>13 A Yes. I --</p> <p>14 Q -- what is that based on?</p> <p>15 A Excuse me?</p> <p>16 Q Sorry. So you said that -- I'm just</p> <p>17 wondering, what part of the '485 patent were you looking</p> <p>18 at when you came to that conclusion?</p> <p>19 A Very --</p> <p>20 MR. LYONS: Objection; vague.</p> <p>21 A Very first chart. There is a X mark on the</p> <p>22 bit cell 30.</p> <p>23 Q And --</p> <p>24 A Yeah. So that X correspond to -- my</p> <p>25 understanding, according to the description, it is</p>	<p style="text-align: right;">160</p> <p>1 Q Sorry. I'm asking if you've ever studied,</p> <p>2 like, the law of patents.</p> <p>3 A No.</p> <p>4 Q All right. And you've never worked at a law</p> <p>5 firm; is that right?</p> <p>6 A No, never.</p> <p>7 Q Your training has been as an engineer; is that</p> <p>8 correct?</p> <p>9 A That is correct.</p> <p>10 Q And you're not familiar with the legal</p> <p>11 standards for patent infringement; is that correct?</p> <p>12 A Patents standard, probably I am not -- not an</p> <p>13 expert at least, if I know anything.</p> <p>14 Q And you're probably not familiar with the</p> <p>15 legal standards for claim construction; is that correct?</p> <p>16 A That is correct.</p> <p>17 Q And you're also not familiar with the legal</p> <p>18 standards for validity; is that correct?</p> <p>19 A Could -- could you say that question again.</p> <p>20 Q Yeah. And you're not also familiar with the</p> <p>21 legal standards for patent validity; is that correct?</p> <p>22 A That is correct.</p> <p>23 Q All right. And these opinions that you have</p> <p>24 about the '485 and '373 patent, did you discuss those</p> <p>25 with your attorneys?</p>

<p style="text-align: right;">205</p> <p>1 close to thousand, I heard, but I don't absolutely</p> <p>2 remember or know the exact number.</p> <p>3 Q And what was the general responsibility of the</p> <p>4 CCDO group?</p> <p>5 A CCDO group was delivering the next generation,</p> <p>6 the CPU microprocessor for desktop and the laptop for</p> <p>7 generations, and that was the charter. Yeah.</p> <p>8 Q And what was your role within the CCDO group?</p> <p>9 A I was primarily working on the SRAM array --</p> <p>10 memory array designs and mainly for MLC. But also, I</p> <p>11 was involved in some of the design methodology</p> <p>12 definition and also some of the MLC cache architecture</p> <p>13 definition work. At the same time, I was also involved</p> <p>14 in some of the LLC organization development.</p> <p>15 Q In your work at Intel, did you work on any</p> <p>16 write assist features that were ultimately incorporated</p> <p>17 into chips that Intel sold?</p> <p>18 A Write assist circuit, yes. Yes, write assist</p> <p>19 circuit was one of them.</p> <p>20 Q And did you work on any particular write</p> <p>21 assist circuit?</p> <p>22 MS. WEN: Objection; form.</p> <p>23 A I believe the -- I worked on the two write</p> <p>24 assists, so that one is a TVC, and the other one is a</p> <p>25 charge share write assist, two of them as a -- you know,</p>	<p style="text-align: right;">207</p> <p>1 Q At a high level, what do you understand the</p> <p>2 '485 patent to describe?</p> <p>3 MS. WEN: Objection; calls for expert</p> <p>4 testimony and calls for legal conclusions.</p> <p>5 A So it has a charge share capacitor</p> <p>6 construction using the memory cell. And also the</p> <p>7 program is using -- is used -- used with the</p> <p>8 connectivity programming on the bit cell and charge</p> <p>9 share capacitor -- capacitance node. So that is the</p> <p>10 primary circuit component as a write assist on top of</p> <p>11 the charge share transfer -- charge transfer transistor.</p> <p>12 Yeah.</p> <p>13 Q Does the charge share write assist feature in</p> <p>14 Intel's Broadwell products use the technique in the</p> <p>15 '485 patent?</p> <p>16 MS. WEN: Objection; calls for expert</p> <p>17 conclusions, calls for legal conclusions -- I'm sorry --</p> <p>18 calls for expert testimony, leading.</p> <p>19 A In my mind, I don't think we did -- it did.</p> <p>20 Q How does the charge share write assist feature</p> <p>21 in Broadwell differ from what's in the -- what the</p> <p>22 '485 patent describes?</p> <p>23 MS. WEN: Objection; calls for expert</p> <p>24 testimony, calls for a legal conclusion, is vague and</p> <p>25 ambiguous, leading.</p>
<p style="text-align: right;">206</p> <p>1 which became a product.</p> <p>2 Q And which Intel processors included the charge</p> <p>3 share write assist?</p> <p>4 A Only the Broadwell was the only product, I</p> <p>5 believe, as I understand.</p> <p>6 Q Do you understand that VLSI has accused</p> <p>7 Intel's processors of infringing the '485 patent in this</p> <p>8 case?</p> <p>9 MS. WEN: Objection; leading.</p> <p>10 A My understanding of the patent, I don't think</p> <p>11 we did.</p> <p>12 Q All right. And specifically, do you</p> <p>13 understand that VLSI has accused the charge share write</p> <p>14 assist feature of infringing the '485 patent in this</p> <p>15 case?</p> <p>16 A Yes.</p> <p>17 MS. WEN: Objection; leading.</p> <p>18 A Yes.</p> <p>19 Q Had you ever heard of the '485 patent during</p> <p>20 the time you worked on the Broadwell project?</p> <p>21 A No, I never even thought there was a patent</p> <p>22 filed already back then.</p> <p>23 Q So you had -- had you ever heard of the</p> <p>24 '485 patent prior to this litigation?</p> <p>25 A No.</p>	<p style="text-align: right;">208</p> <p>1 A So there is a two major points, A, charge</p> <p>2 share capacitor component, the patent, the memory cell,</p> <p>3 but the Broadwell charge share write assist used NMOS.</p> <p>4 I don't remember which NMOS transistor. But MOS</p> <p>5 capacitor has the capacitance component. So that part</p> <p>6 is different.</p> <p>7 And the second part -- second point is</p> <p>8 programability is connecting or disconnecting the memory</p> <p>9 cell within a row or column for the charge share</p> <p>10 capacitor node in the patent, but Broadwell uses --</p> <p>11 programmable -- programmable variable capacitance node</p> <p>12 using a MOS transistor as a capacitor. So that</p> <p>13 programmability option will be different.</p> <p>14 Q In your view, would the technology described</p> <p>15 in the '485 patent provide any benefit to Intel's</p> <p>16 products?</p> <p>17 MS. WEN: Objection; calls for expert</p> <p>18 testimony, calls for a legal conclusion, vague and</p> <p>19 ambiguous, leading.</p> <p>20 A In my mind, probably, Intel may not be -- at</p> <p>21 least a CPU development team in Oregon may have not used</p> <p>22 it if we knew there was a -- such technique.</p> <p>23 Q Why?</p> <p>24 A A -- as I mentioned earlier, the</p> <p>25 capacitance -- effectiveness of the capacitance is one</p>


<p style="text-align: right;">225</p> <p>1 relate to any minimum operating voltages of the SRAM in 2 the Broadwell MLC? 3 MS. WEN: Same objections. 4 A I don't think so. 5 Q So the power gate does not relate to any 6 operate -- any minimum operating voltages of the SRAM in 7 the Broadwell mid-level cache? 8 MS. WEN: Same objections. 9 A No. 10 Q Do you understand that VLSI has accused the 11 mid-level cache of Intel's Broadwell processors of 12 accusing the '373 patent in this case? 13 MS. WEN: Objection; leading, vague. 14 A It sounded like -- sounds right, but -- yeah. 15 Q You were asked some questions early about your 16 understanding of the '373 patent. Do you remember those 17 questions? 18 A Yes, there were some. Yeah. 19 Q Had you heard of the '373 patent when you were 20 involved in the Broadwell project? 21 A No. 22 Q Had you ever heard of the '373 patent before 23 this litigation? 24 A No. 25 MS. WEN: Objection; leading.</p>	<p style="text-align: right;">227</p> <p>1 memory? 2 MS. WEN: Same objections. 3 A No. 4 Q Mr. Shimomura, to summarize, does Intel use 5 the '373 patent in the Broadwell mid-level cache? 6 MS. WEN: Same objections. 7 A In my mind, I don't think we did. 8 Q Did you perform any formal legal analysis to 9 assess the validity of the '373 patent? 10 A No. 11 MS. WEN: Same objection. 12 MR. LYONS: All right. At this time, we have 13 no further -- I have no further questions. Thank you, 14 Mr. Shimomura. 15 THE WITNESS: Thank you. 16 FURTHER EXAMINATION 17 BY MS. WEN: 18 Q I just have a few. Apologies. 19 Is it your opinion that an MLC or NMOS 20 capacitors are not dummy cells? 21 MR. LYONS: Objection; vague, lack of 22 foundation, calls for speculation. 23 A No, not -- not as I understand. Not as my 24 knowledge. 25 Q Why?</p>
<p style="text-align: right;">226</p> <p>1 Q Does the mid-level cache in Intel's Broadwell 2 processors use the idea described in the '373 patent? 3 MS. WEN: Objection; calls for expert 4 testimony, calls for a legal conclusion, vague and 5 ambiguous, leading. 6 A No, I don't think so. 7 Q How is the mid-level cache in Intel Broadwell 8 processors different from what is described in the 9 '373 patent? 10 MS. WEN: Same objections. 11 A How different? We are not using the voltage 12 values based on the characterization data. That's one 13 major difference. 14 Q So what causes the Broadwell mid-level cache 15 to switch from one voltage supply to another? 16 MS. WEN: Same objections. 17 A We design the -- based on the P-state, which 18 is defined in a different scheme, which I don't exactly 19 know the details of it, based on that power -- P-state 20 transition voltage, as well as the power gate to LVR 21 switching would be appropriately switched or operated 22 accordingly. 23 Q In the Broadwell mid-level cache, is there any 24 comparison of a memory voltage to a minimum operating 25 voltage to determine which voltage to provide to the</p>	<p style="text-align: right;">228</p> <p>1 A Well, dummy cell is -- we usually call it some 2 kind of replicated structures, and, you know, those 3 cells are supposed to be used at the edge of the regular 4 replicate -- repeated -- repeated VR structures. And 5 the dummy -- so that's how we refer as -- refer to as a 6 dummy cell, such as the edge cell in the SRAM arrays or 7 analog device or analog transistor groups, N cell at the 8 40 structures edge. 9 And this Broadwell MLCs, there is a charge 10 share capacitors are not, you know, even including those 11 kind of dummy structures at all. So those MOS capacitor 12 component is solely used as the capacitor, not even 13 considered as a dummy. So it is a valid active 14 transistor used for -- as a circuit component. 15 Q I see. And what is a dummy transistor? 16 A Dummy -- 17 MR. LYONS: Objection. 18 A Dummy transistor is considered as the 19 transistor structure fabrication, but those transistors 20 are not actively used as a circuit component. 21 Q And, yes or no, did you discuss your -- this 22 definition of a dummy transistor with Intel's counsel? 23 A Yes. 24 Q And do you agree that Intel's charge share 25 capacitor is adjustable?</p>

OUTSIDE COUNSEL'S EYES ONLY

Transcript of Shigeki Shimomura

58 (229 to 232)

Conducted on June 16, 2020

<p>229</p> <p>1 MR. LYONS: Objection; vague.</p> <p>2 A Yes.</p> <p>3 Q Do you agree that Intel's charge share</p> <p>4 capacitor is programmable?</p> <p>5 MR. LYONS: Objection; vague, outside the</p> <p>6 scope of the redirect.</p> <p>7 A Yes.</p> <p>8 Q And -- thank you.</p> <p>9 When you say that charge share write assist</p> <p>10 was commonly accepted among engineers, what time frame</p> <p>11 were you referring to?</p> <p>12 A Well, charge share effect is very widely known</p> <p>13 already. It's -- yeah. Any of the circuit designer</p> <p>14 would know it as a basic knowledge of the circuit on --</p> <p>15 so, yeah, I think that -- that's a commonly known</p> <p>16 understanding --</p> <p>17 Q Are you referring to -- sorry.</p> <p>18 A Sorry.</p> <p>19 I'm -- I'm not even -- you know, I don't even</p> <p>20 think that since what time, you know, it became widely</p> <p>21 known or commonly known. It's the effect of circuit</p> <p>22 techniques or -- not really a circuit technique. It's</p> <p>23 more like one of the effect during a various type of</p> <p>24 circuit operation.</p> <p>25 Q Okay. So you're referring to the physics</p>	<p>231</p> <p>1 CERTIFICATE OF SHORTHAND REPORTER</p> <p>2</p> <p>3 I, Charlotte Lacey, the officer before whom the</p> <p>4 foregoing deposition was taken, do hereby certify that</p> <p>5 the foregoing transcript is a true and correct record of</p> <p>6 the testimony given; that said testimony was taken by me</p> <p>7 stenographically and thereafter reduced to typewriting</p> <p>8 under my direction; that reading and signing was not</p> <p>9 requested; and that I am neither counsel for, related</p> <p>10 to, nor employed by any of the parties to this case and</p> <p>11 have no interest, financial or otherwise, in its</p> <p>12 outcome.</p> <p>13</p> <p>14 IN WITNESS WHEREOF, I have hereunto subscribed my</p> <p>15 hand this 30th of June, 2020.</p> <p>16</p> <p>17 </p> <p>18</p> <p>19 _____</p> <p>20 Charlotte Lacey, RPR, CSR #14224</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p>230</p> <p>1 concept of charge sharing rather than a specific write</p> <p>2 assist?</p> <p>3 A That is correct.</p> <p>4 MR. LYONS: Objection; misstates testimony.</p> <p>5 MS. WEN: That's all I have. Thank you,</p> <p>6 Mr. Shimomura.</p> <p>7 MR. LYONS: Thank you. I think we're all set.</p> <p>8 No further questions here.</p> <p>9 THE VIDEOGRAPHER: All right. Everyone stand</p> <p>10 by, please.</p> <p>11 This is the end of the remote video deposition</p> <p>12 of Shigeki Shimomura. We are going off the record at</p> <p>13 5:16 p.m.</p> <p>14 (The deposition concluded at 5:16 p.m. PST)</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	

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